L Number	Hits	Search Text	DB	Time stamp
1	5411	optical adj20 (epoxy or cement)	USPAT; EPO; JPO; DERWENT	2004/09/27 12:05
2	26350	diffraction adj2 grating	USPAT; EPO; JPO; DERWENT	2004/09/27 12:05
3	231	(optical adj20 (epoxy or cement)) and (diffraction adj2 grating)	USPAT; EPO; JPO; DERWENT	2004/09/27 12:06
4	216	master adj2 grating	USPAT; EPO; JPO; DERWENT	2004/09/27 12:06
5	2	((optical adj20 (epoxy or cement)) and (diffraction adj2 grating)) and (master adj2 grating)	USPAT; EPO; JPO; DERWENT	2004/09/27 12:06

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=> b ca
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.21       0.21


=> s diffraction(w)grating?
        367695 DIFFRACTION
         28601 GRATING?
L1       12493 DIFFRACTION(W)GRATING?

=> s optical(w)(cement or epoxy)
        704562 OPTICAL
        132296 CEMENT
        209023 EPOXY
L2         120 OPTICAL(W)(CEMENT OR EPOXY)

=> s l1 and l2
L3           0 L1 AND L2

=> s l1 and master
         20658 MASTER
L4         108 L1 AND MASTER

=> s l4 and master(w)grating?
         20658 MASTER
         28601 GRATING?
            33 MASTER(W)GRATING?
L5          26 L4 AND MASTER(W)GRATING?

=> s l5 and epoxy
        209023 EPOXY
L6           4 L5 AND EPOXY

=> d ti ab 1-4

L6   ANSWER 1 OF 4  CA  COPYRIGHT 2004 ACS on STN
TI     ***Diffraction***     ***grating***   and fabrication technique for same
AB   Large, high quality   ***diffraction***     ***gratings***   having
     carefully formed blazing angles and defect free reflective surfaces can be
     fabricated on specially oriented substrates using photolithog. or
     micromachining techniques.  By selecting a single crystal substrate whose
     surface is at a known angle with respect to certain crystallog. planes of
     the substrate, anisotropic etching of the substrate can achieve
       ***diffraction***     ***grating***   grooves with reflective surfaces
     corresponding to the to specific crystallog. planes.  The angle between
     the surface of the substrate and the specific crystallog. planes dets. the
     blazing angle of the   ***diffraction***     ***grating***   .  Thus,
     large, high quality   ***diffraction***     ***gratings***   can be
     fabricated for use in, for example, laser systems, or for use as
       ***master***     ***gratings***   in the manuf. of replica gratings.

L6   ANSWER 2 OF 4  CA  COPYRIGHT 2004 ACS on STN
TI   Large   ***diffraction***     ***grating***   for gas discharge laser
AB   A grating based line narrowing unit for gas discharge lasers with
     increased beam expansion to produce smaller bandwidths.  The grating has a
     grating surface >100 cm2 and is a replica grating produced from a
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master ***grating*** produced with a lithog. process on a single crystal substrate. In preferred embodiments, a beam from the chamber of the laser is expanded with 4 prism beam expanders. The large grating, much larger than gratings historically produced from diamond lined gratings, permit substantial redns. in bandwidth while maintaining laser efficiency. A narrow band of wavelengths in the expanded beam is reflected from a grating in a Littrow configuration back via the bi-directional beam expanders into the laser chamber for amplification.

L6 ANSWER 3 OF 4 CA COPYRIGHT 2004 ACS on STN
TI UV protective overcoat for replicated ***diffraction*** ***gratings***
AB An overcoat protected ***diffraction*** ***grating*** . A replica grating having a thin Al reflective grating surface is produced by replication of a ***master*** ***grating*** or a submaster grating. The thin Al reflective surface may be cracked or have relatively thick grain boundaries contg. oxides and hydroxides of Al and typically is also naturally coated with an Al oxide film. The grating is subsequently overcoated in a vacuum chamber with one or two thin, pure, dense Al overcoat layers and then also in the vacuum the Al overcoat layer or layers are coated with one or more thin protective layers of a material transparent to UV radiation. In preferred embodiments this protective layer is a single layer of MgF2, SiO2 or Al2O3. In other preferred embodiments the layer is a layer of MgF2 or SiO2 covered with a layer of Al2O3 and in a 3rd preferred embodiment the protective layer is made up of four alternating layers of MgF2 and Al2O3 or four alternating layers of SiO2 and AL2O3 Preferably, the thickness of the transparent protective layers are chosen to produce a phase shift at the proposed operating wavelengths of an integral no. of 27.pi..

L6 ANSWER 4 OF 4 CA COPYRIGHT 2004 ACS on STN
TI High-temperature ***diffraction*** ***gratings*** for synchrotron radiation
AB SiC-based mech. ruled ***master*** ***gratings*** and replicas are developed for synchrotron radiation instruments. An SiC-based Au replica grating without any thermal deformation due to active cooling is used in a high-photon-flux-soft x-ray monochromator that is installed in a bending magnet beamline. An SiC-based Au ***master*** ***grating*** is used in a vacuum UV/soft x-ray monochromator installed in an undulator beamline with slight groove shape deformation. This deformation is caused by the thermal change of the Au film occurring at higher than 250-300.degree.. A method for cleaning C-contaminated synchrotron radiation optics is tested. The UV ozone ashing method effectively cleans C contamination on the optics and is useful for extending the lifetime of synchrotron radiation optics.

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=> s surface relief diffraction grating?
   1849060 SURFACE
     24900 RELIEF
    367695 DIFFRACTION
     28601 GRATING?
L7      17 SURFACE RELIEF DIFFRACTION GRATING?
             (SURFACE(W)RELIEF(W)DIFFRACTION(W)GRATING?)

=> d his

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    FILE 'CA' ENTERED AT 14:09:13 ON 27 SEP 2004
L1       12493 S DIFFRACTION(W)GRATING?
L2         120 S OPTICAL(W)(CEMENT OR EPOXY)
L3           0 S L1 AND L2
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L4          108 S L1 AND MASTER
L5           26 S L4 AND MASTER(W)GRATING?
L6            4 S L5 AND EPOXY
L7           17 S SURFACE RELIEF DIFFRACTION GRATING?

=> s l1 and (antibod? or antigen)
        406028 ANTIBOD?
        254490 ANTIGEN
L8          44 L1 AND (ANTIBOD? OR ANTIGEN)

=> s l8 and etch
         36190 ETCH
L9           0 L8 AND ETCH

=> s l8 and mold?
        336910 MOLD?
L10          2 L8 AND MOLD?

=> d ti ab 1-2

L10  ANSWER 1 OF 2  CA  COPYRIGHT 2004 ACS on STN
TI   Device with chemical surface patterns
AB   The invention concerns a device with chem. surface patterns (defined
     surface areas of at least two different chem. compns.) with biochem. or
     biol. relevance on substrates with prefabricated patterns of at least two
     different types of regions (.alpha., .beta.,...), whereas at least two
     different, consecutively applied mol. self-assembly systems (A, B...) are
     used in a way that at least one of the applied assembly systems (A or B
     or...) is specific to one type of the prefabricated patterns (.alpha. or
     .beta. or...). A silicon wafer was coated with TiO2 followed by SiO2 and
     a pattern of 5 X 5 squares of TiO2 was etched through the SiO2 layer. The
     patterned surface was dipped in aq. ammonium dodecyl phosphate for
     self-assembly of DDP on top of the TiO2 areas, rendering these areas
     highly hydrophobic. The surface was dipped in an aq. soln. of
     poly(L-lysine)-g-poly(ethylene glycol) (PLL-g-PEG) to selectively adsorbed
     to the SiO2 regions. Texas Red-streptavidin selectively adsorbed to the
     PLL-g-PEG coating.

L10  ANSWER 2 OF 2  CA  COPYRIGHT 2004 ACS on STN
TI   Diffraction-based cell detection using a micro-contact-printed
       ***antibody***  grating
AB   An optical biol. detector is able to bind specific targeted bacterial
     cells by stamping an  ***antibody***  grating pattern onto a silicon
     surface. The  ***antibody***  grating alone produces insignificant
     optical diffraction, but upon immunocapture of the targeted cells, the
     optical phase change produces a diffraction pattern. Micro-contact
     printing provides a method for placing the  ***antibody***  grating
     pattern directly onto a substrate surface with no addnl. processes or
     binding chems.  ***Antibodies***  or other biol. active material may be
     stamped directly onto clean native oxide silicon substrates with no other
     chem. surface treatments. Direct binding of the  ***antibodies***  to
     the silicon occurs in a way that still allows them to function and
     selectively bind  ***antigen***  . The performance of the sensor was
     evaluated by capturing Escherichia coli O157:H7 cells on the
       ***antibody***  -stamped lines and measuring the intensity of the first
     order diffraction beam resulting from the attachment of cells. The
     diffraction intensity increases in proportion to the cell d. bound on the
     surface.


=> d his

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L1	12493	S	DIFFRACTION(W)GRATING?
L2	120	S	OPTICAL(W)(CEMENT OR EPOXY)
L3	0	S	L1 AND L2
L4	108	S	L1 AND MASTER
L5	26	S	L4 AND MASTER(W)GRATING?
L6	4	S	L5 AND EPOXY
L7	17	S	SURFACE RELIEF DIFFRACTION GRATING?
L8	44	S	L1 AND (ANTIBOD? OR ANTIGEN)
L9	0	S	L8 AND ETCH
L10	2	S	L8 AND MOLD?